

Appln. No. 10/407,598
Amendment
Reply to Office Action dated June 9, 2005

Docket No. 9526-9

AMENDMENTS TO THE CLAIMS

This listing will replace all prior versions, and listings, of claims in the application:

1. (Currently amended) A method for carrying out in continuous, under so-called pseudo-isothermal conditions and in a predetermined reaction environment, such as a catalytic bed, a selected chemical reaction, comprising the steps of: providing in said reaction environment at least one tubular heat exchanger fed with a first flow of a heat exchange operating fluid at a respective predetermined inlet temperature

feeding a first flow of a heat exchange operating fluid at a respective predetermined inlet temperature in at least one tubular heat exchanger provided in said reaction environment, said fluid passing through said at least one tubular heat exchanger according to a respective inlet/outlet path, and which method is characterized by

feeding into said at least one tubular heat exchanger and at one or more intermediate positions of said path, a second flow of operating fluid having a respective predetermined inlet temperature.

2. (Currently amended) A heat exchanger for the method according to claim 1, comprising:

a tubular element (12),

a chamber (16) defined within said tubular element (12) and intended for being passed through by a first flow of a heat exchange operating fluid,

a fluid distributor duct, (8) and

a fluid collector duct (9) connected to said tubular element (12) and in fluid communication with said chamber (16), characterized in that it further comprises

an additional distributor (17) of a second flow of said operating fluid in fluid communication with said chamber, (16) and

a feeding duct (18) of said second flow of operating fluid in fluid communication with said additional distributor (17).

Appln. No. 10/648,894

Docket No. 9526-18

Amendment

Reply to Office Action dated June 23, 2005

3. (Currently amended) The heat exchanger according to claim 2, ~~characterized in that wherein~~ said additional distributor (17) is supported within said tubular element (12) and is provided with at least a hole (19) in fluid communication with said chamber (16) at a predetermined distance between said fluid distributor duct (8) and said fluid collector duct (9).

4. (Currently amended) The heat exchanger according to claim 3, ~~characterized in that wherein~~ said additional distributor (17) is tubular shaped, closed at one end thereof and connected to said feeding duct (18) at an opposite end thereof.

5. (Currently amended) The heat exchanger according to claim 4, ~~characterized in that wherein~~ said feeding duct (18) is supported within said fluid distributor duct (8) or said fluid collector duct (9).

6. (Currently amended) The heat exchanger according to claim 3, ~~characterized in that wherein~~ said additional distributor (17) extends for substantially the entire length of said tubular exchanger (12).

7. (Currently amended) The heat exchanger according to claim 3, ~~characterized in that wherein~~ said additional distributor (17) is provided with a plurality of said holes (19) arranged in rows at respective predetermined distances between said fluid distributor duct (8) and said fluid collector duct (9).

8. (Currently amended) The heat exchanger according to claim 4, ~~characterized in that wherein~~ the diameter of said additional distributor (17) varies along its length.

9. (Currently amended) The heat exchange unit for pseudo-isothermal reactors, comprising at least one tubular heat exchanger according to claim 2.

10. (New) A pseudo-isothermal chemical reactor comprising a predetermined reaction environment and a heat exchange unit according to claim 9 provided therein.

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